

# Making Water Safe to Drink

## **1** Is Our Water Safe to Drink?

*Directions:* Read or act out the following passage.



Emma and Marek Sowinski, a young couple, are sitting at their kitchen table eating breakfast. Emma is four months pregnant and is very hungry this morning.

*Emma:* Marek, could you pour me some juice, please?

*Marek:* Sure.

*Emma:* Will you pass me the toast and butter, too?

*Marek:* OK.

*Emma:* Oh, can you also get me another piece of fruit? I'm really hungry.

*Marek:* Is there anything else you would like while I'm up? Some milk? Some bacon? A glass of water?

*Emma:* I'm fine. I don't want anything else.

*Marek:* Good. I think I'll have a glass of water. [*Takes a glass and goes to the sink. He turns on the faucet and fills his glass.*]

*Emma:* Hey, Marek, do you think we should drink bottled water?

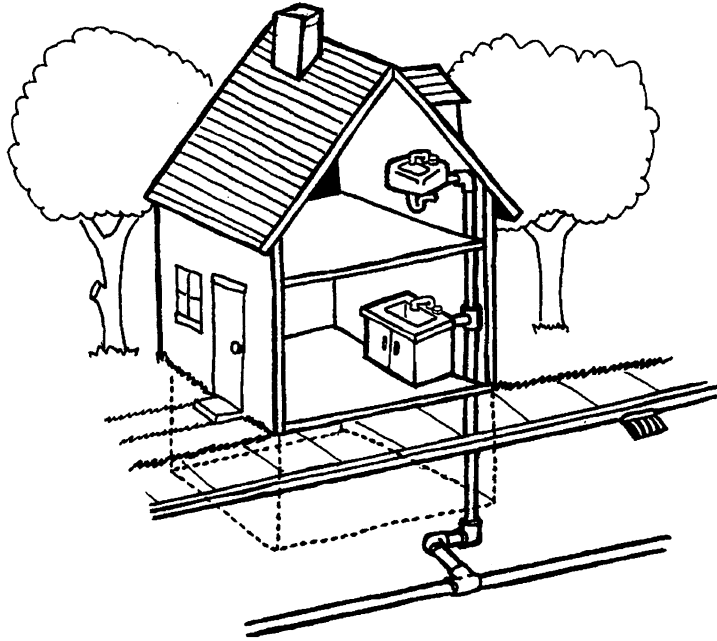
*Marek:* Why?

*Emma:* Well, my friend Shira said that she has lead in her water.

*Marek:* Is that your friend who lives down the street from us?

*Emma:* Yes. She tested her water last month.

*Marek:* [*Holds up his glass of water and looks at it.*] Do you think we have lead in our water, too?



*Emma:* Maybe. Our home is more than 50 years old. Shira said that older homes usually have lead pipes in them.

*Marek:* So, the water picks up lead as it moves through the pipes.

*Emma:* Correct.

*Marek:* How do we determine whether our water contains lead?

*Emma:* Maybe Shira knows.

*Marek:* I knew you were going to say that. Give her a call.

[*Emma picks up the phone and calls Shira.*]

*Shira:* Hello.

*Emma:* Hello, Shira. This is Emma.

*Shira:* Hi. How are you?

*Emma:* I'm good.

*Shira:* So, what's happening? How do you feel? How is the pregnancy?

*Emma:* Oh, I'm feeling fine. I'm four months pregnant now. I don't have morning sickness.

*Marek:* [*Says loudly from the table.*] Emma, are you going to ask her or not?

*Emma:* [*Looks at Marek.*] OK. OK. [*Then speaks into the phone.*] So, Shira, I'm calling because I want to know how you tested your water for lead. Marek and I think that we may have lead in our water.

*Shira:* It was easy. First, I called my landlord to get the name of our water supplier. Then I called the water supplier who gave me the name of a certified laboratory. I called the lab and one week later, someone from the laboratory sent me directions on how to test the water at my house. I think it cost \$15.

- Emma:* I think we should get our water checked, too.
- Shira:* Yes, you should because you are pregnant. I heard that lead can affect you and your child. Lead exposure during pregnancy may result in low birth weight, miscarriage, birth defects, and slower development in children.
- Emma:* OK. We will call right away.
- Shira:* Good. I'm glad you're getting your water tested. There are also some simple things you can do to protect yourself while you wait for the results. You can run your water for 30 to 60 seconds before drinking it or using it in cooking. You also should always use cold water. If there is any lead in your water, then this process will flush out most of it. Let me know what happens.
- Emma:* OK. Goodbye.



## 2 Vocabulary

**Directions:** Review the vocabulary words below and define each using simple English terms.

kitchen(s) ( <i>n.</i> )	table(s) ( <i>n.</i> )
breakfast(s) ( <i>n.</i> )	eat ( <i>v.</i> )
toast ( <i>n.</i> )	butter ( <i>n.</i> )
fruit ( <i>n.</i> )	hungry ( <i>adj.</i> )
juice ( <i>n.</i> )	milk ( <i>n.</i> )
glass(es) ( <i>n.</i> )	water ( <i>n.</i> )
lead ( <i>n.</i> )	faucet(s) ( <i>n.</i> )
sink(s) ( <i>n.</i> )	fill ( <i>v.</i> )
pipe(s) ( <i>n.</i> )	test(s) ( <i>n.</i> ); test ( <i>v.</i> )
dollar(s) ( <i>n.</i> )	cost ( <i>v.</i> )
determine ( <i>v.</i> )	laboratory(ies) ( <i>n.</i> )
telephone(s) ( <i>n.</i> )	water supplier(s) ( <i>n.</i> )
certified ( <i>adj.</i> )	pregnant ( <i>adj.</i> )

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**Directions:** Review “Is Our Water Safe to Drink?” and answer the following questions.

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1. What are Marek and Emma eating for breakfast? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
2. Where do Emma and Marek live? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
3. Who is Shira? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
4. How does lead get into Emma and Marek’s drinking water? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
5. Why should Emma be worried about the lead in the water? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
6. How can Emma and Marek test their water for lead? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
7. How much did it cost Shira to have her water tested for lead? Do you think this is expensive? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## 4

# Testing for Lead in Your Water

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**Directions:** Read the directions below to test your water for lead. Follow the directions and collect water samples from home. Bring your samples to the next class. The teacher will locate the nearest certified testing laboratory and mail class samples for testing.

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You think your water may contain lead. Ask your local water supplier for the names of certified laboratories that will test your water. The U.S. Environmental Protection Agency considers water safe if it has less than 15 parts per billion\* (ppb) of lead. Some doctors suggest that anything greater than 10 ppb is unsafe. You should test if you have water from a drinking well, pipes with lead solder, or water that is very corrosive. Collect two samples of water: one that was standing in the plumbing lines overnight, and another that ran for several minutes to flush the lines.

You can also call the U.S. Environmental Protection Agency Safe Drinking Water Hotline if you have any questions (1-800-426-4791).

If your water contains *less than 5 ppb of lead*, then let your water run for one minute before using it for drinking or cooking.

If your water contains *between 5 and 14 ppb of lead*, then let your water run for one minute before using it for cooking or drinking and ask everyone in your family to drink less than 16 ounces of this water each day.

If your water contains *more than 15 ppb of lead*, then do not drink the water or use it for cooking. Consult your local or state health department for advice.

## 5

# Reviewing the Water Test Results

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**Directions:** Read or act out the following passage.

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It is three weeks later. As recommended, Emma and Marek collected two samples of water: one that was standing in the plumbing lines overnight and another that ran for several minutes to flush the lines. They sent both samples to a certified laboratory for tests. The laboratory mailed the test results to Emma and Marek. As the scene opens, Emma, Marek, and Shira are talking about the test results at the kitchen table.

*Marek:* According to these test results, our water contains lead.

*Emma:* Yes. It looks that way. It's pretty high too—14 parts per billion

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\* one billion = 1,000,000,000 =  $10^8$

of lead in the first sample and 6 parts per billion after letting the water run for one minute.

*Marek:* I wonder what we should do?

*Emma:* What about buying a water filter?

*Marek:* I don't know. I read that some filters are expensive and some do not remove lead from the water.



*Shira:* Why don't you call the U.S. Environmental Protection Agency's Safe Drinking Water Hotline to find out which filters are certified for lead removal. They provide that kind of information.

*Emma:* Yes. I guess we could do that. What did you do, Shira?

*Shira:* Well, I called the local health department when I found out about the lead in my water. I was certain that I was poisoning myself.

*Emma:* And . . . what did the health department officials say?

*Shira:* They told me not to worry so much. Apparently, there are some easy things I can do to reduce the lead in my water. I should not drink, cook, or make baby formula with water from the hot water tap. Hot water contains more lead than cold water because it is corrosive.

*Emma:* Really?

*Shira:* Yes. The health department officials also told me to run my cold water for 30 to 60 seconds before drinking it or using it for cooking. This allows me to draw water directly from the street pipes—where there is no lead—and flushes the water that has been standing in my lead plumbing.

*Marek:* Yes. I guess we could remember to run the water for a minute before using it. Isn't that a waste of water though?

*Shira:* If the waste bothers you, collect drinking water in bottles at night after you have fully flushed the water from the faucet.



- Emma:* That's a good idea. But, do you think I should risk drinking water from the faucet? I'm afraid it might harm the baby.
- Shira:* You will have to ask your doctor about that. Maybe you should buy bottled water.
- Marek:* At least there are things we can do to prevent the problem from becoming worse.

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## 6

## Vocabulary

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**Directions:** Review the vocabulary words below and define each using simple English terms.

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hotline(s) (n.)	sample(s) (n.)
corrosive (adj.)	test(s) (n.); test (v.)
drink (v.)	flush (v.)
mail (v.)	safe (adj.)
water filter(s) (n.)	expensive (adj.)
collect (v.)	bottle(s) (n.)
health department(s) (n.)	waste (v.)
harm (v.)	baby(ies) (n.)
prevent (v.)	risk (n.)
plumbing (n.)	

## Pick the Correct Response

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**Directions:** Read each statement and choose the correct answer.

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1. Emma and Marek mailed their water sample to the
  - a. U.S. Environmental Protection Agency
  - b. local health department
  - c. EPA-certified laboratory
  - d. doctor
2. Emma and Marek's water contains
  - a. no lead
  - b. 10 parts per billion of lead
  - c. 14 parts per billion of lead
  - d. 30 parts per billion of lead
3. In a house with lead plumbing, hot water
  - a. contains more lead than cold water
  - b. is good for washing fruits and vegetables
  - c. contains less lead than cold water
  - d. is good for making baby formula
4. One way to reduce the risk of lead in the water is to
  - a. use hot water fresh from the tap for cooking
  - b. boil the water
  - c. wash fruits and vegetables in hot water
  - d. let the cold water run for 60 seconds before drinking it or using it for cooking
5. Emma and Marek decide to
  - a. buy a water filter
  - b. buy bottled water
  - c. let the water run for 60 seconds before each use
  - d. unknown

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**Note to Student:** More information on the effects of lead poisoning can be found in the units "Going to the Doctor" and "Identifying Symptoms of Illness."

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